The Appalachian Spotter

Volume 2, Issue 1 **March 4, 2000**

National Weather Service
Morristown TN

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Special points of interest:

* Flash Flood Safety Tips: Never drive through flooded roadways! Do not camp along streams during threatening conditions.
* Toll-free Spotter Number for Spotter Reports Only
* General Weather Information Number **423-586-3771**
* **www.srh.noaa.gov/mrx**

Morristown County Warning Area Severe Weather Climatology

David Hotz, Senior Forecaster

During the past 30 years, there has been a distinct increase in the number of severe weather events reported to the National Weather Service (NWS). This increase has been most dramatic since WFO Morristown, with the new Doppler Radar, began to serve the area (Figs. 1, 2, and 3).

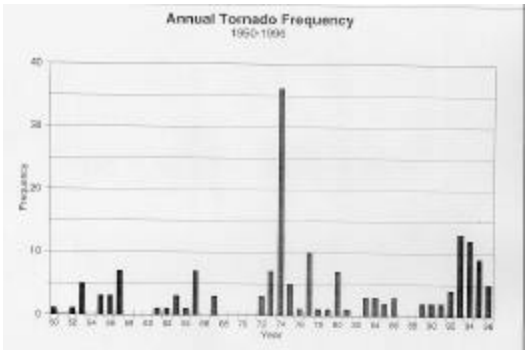

Figure 1

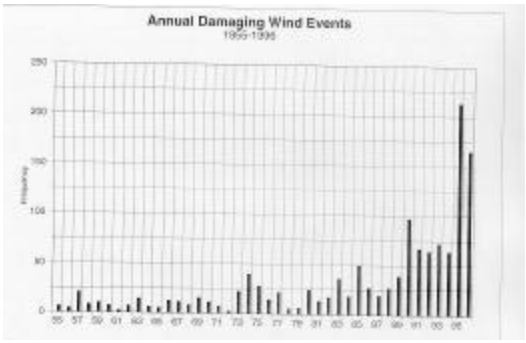

Figure 2

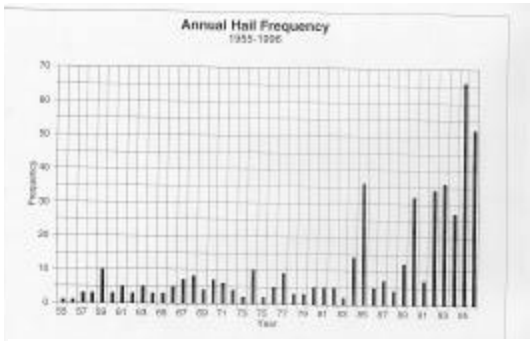

Figure 3

This increase is likely because of the in-

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January Sees The Return of Winter Weather

Rich Pollman, Senior Forecaster

The start to the 1999-2000 Winter started as a repeat of last year's winter with warmer temperatures and very little winter precipitation. However, that changed in the middle of January when arctic air started making its way down into the eastern United States. A couple of quick storm systems moved from the southern Great Lakes region and into the eastern Tennessee Valley on the night of the 17th and on the night of the 19th. Both of these storms mainly affected southwest Virginia and Northeast Tennessee with anywhere from 2 to 6 inches of snow. Behind each of these storms was a reinforcing shot of cold air. This set the stage for the most wide-

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Severe Weather Reaches Peak in May

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creased sensitivity of the new radar, and to the increasing awareness of the NWS, local emergency managers, spotters and the general public.

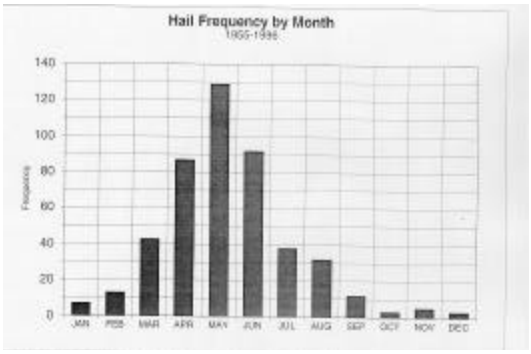

Figure 4

The occurrence of tornadoes and hail are most frequent during the months of April and May (Fig. 4), while the peak time for damaging winds tends to occur a bit later in June. Most of the severe weather during the summer months is due to wind damage (Fig. 5). The peak time for all types of severe

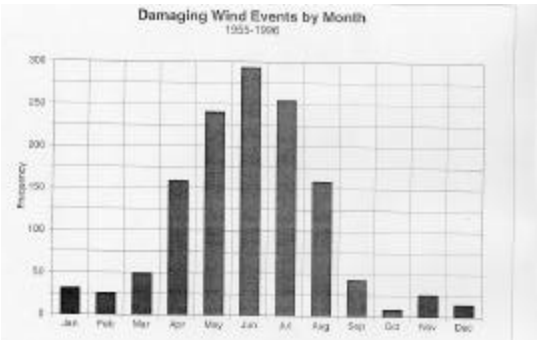

Figure 5

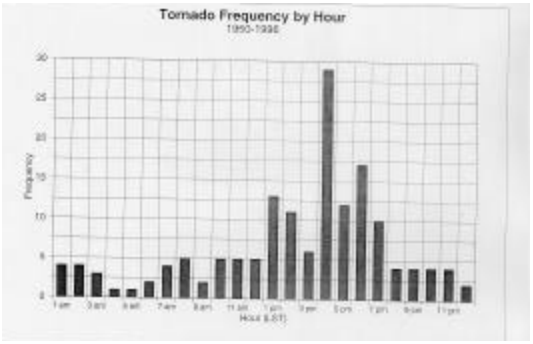

Figure 6

weather occurs from mid-afternoon to early evening (Fig. 6).

A closer look at the severe weather climatology revealed that a majority of the tornadoes have occurred across southeast Tennessee and the plateau region. This is mainly attributed to the closer proximity to warm and moist air originating from the Gulf of Mexico. There is a distinct minimum of tornado events across southwest Virginia and northeast Tennessee. This minimum is likely due to the mountainous terrain disrupting inflow into the thunderstorms. The northeast to southwest orientation of the Appalachians in far eastern Tennessee tends to block deep low-level moisture penetration into these areas.

However, tornadoes have been reported in almost every county across southwest Virginia, east Tennessee, and extreme southwest North Carolina.

Slides and Videos Still Wanted

Rich Pollman

For years spotters have been trained with slides and videos featuring storms from the plains states of Texas, Oklahoma, and Kansas. These slides seem to suggest that spotting is not too difficult because there are rarely blocked views of storms from trees, hills, or reduced visibilities from haze or fog. However, we know that spotting in southwest Virginia, east Tennessee and southwest North Carolina can be much more difficult. That is why we would like to get local pictures and videos to incorporate into our spotter presentations.

Your safety should be your biggest concern while spotting for the NWS

The NWS Morristown does not recommend “chasing” in the Southern Appalachian region for any reason and certainly not to get pictures or videos. Your safety is the most important aspect to the NWS when you are spotting.

However, if you happen to have any photographs or videos of storms and their structure, send it into the NWS Morristown office. We will make a copy and then send the photographs or video back to you. As a guideline for what we would like, use the previous spotter presentations. Pictures and videos showing shelf clouds, wall clouds, overshooting tops, mammatus clouds, storm damage, and yes, tornadoes, are all wanted.

Meet...the voice of CRS (NOAA Weather Radio)

Howard Waldron, Warning Coordination Meteorologist

Some of you have already met our new "employee", but we thought the rest of you would like a little introduction. We are not exactly sure of his origins, but we do notice that his accent is not "southern."

Some people have complained, thinking that we are abusing this employee by the long hours he clearly is putting in, and the geographic area that he is responsible for. People traveling across the entire country have reported hearing his broadcast. He did take a short break around Christmas, some think to return to his native land to make sure his accent didn't get changed too much.

Seriously, CRS or Console Replacement System is a computer generated voice system to take the place of our older NOAA Weather Radio recording system. It will take our text messages and automatically generate voice and play these messages over the air. This does a number of things for us and the listening audience.

For us, it allows us to meet our mission of protecting life and property with the re-alignment of the bulk of our staff from technicians to Meteorologists while allowing the remaining technicians more time for other tasks, such as storm damage follow-up, keeping the Cooperative Observer Program running, etc.

For the listen audience, the CRS is a much quicker way of receiving weather information. Within a matter of seconds

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Winter Storm Hits The Region

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spread and heaviest of the winter storms on January 22nd.

Snow, which was heavy at times, started falling across the region during the late morning and early afternoon. The snow accumulated across all 40 counties in the Morristown County Warning Area of Responsibility (CWA). Snowfall totals ranged from 2 to 7 inches, with the highest totals in the mountains as well as the Morristown area. Following the snowfall, the precipitation changed to sleet and freezing rain across most areas, and significant ice accumulations were reported in the southern Valley as well as the southern mountains of east Tennessee and extreme southwest North Carolina.

"The snow accumulated across all 40 counties...Snowfall totals ranged from 2 to 7 inches."

This is also the first winter that the NWS Morristown has total responsibility of long fused watches and warnings, such as Winter Storm Watches and Warnings. With this added responsibility, we have to keep track of winter storm verification. For the event on January 22nd, the NWS Morristown issued a Winter Storm Warning for all 47 zones that we forecast responsibility, and all 47 warnings verified. The following table shows the verification statistics for both the January 22nd event and the total for the season through March 4th. A "Zone" is a forecast zone. In the Morristown area of responsibility, there are 47 forecast zones and generally a county equals a forecast zone. The exception is near the Tennessee mountains, where most counties have been divided into valley and mountain zones.

	January 22nd Event	Season to Date through March 4th
Zone Warning Issued	47	107
Zone Warning Verified	47	81
False Alarm Rate	0%	24%
Average Warning Lead Time (hours)	4	8
Total Zone Events	47	88
Warned Zone Events	47	81
Probability of Detection	100%	92%
Storm Preceded by Watches	No	5 Winter Storms 2 Preceded by Watches

Continue to Report Winter Weather

Rich Pollman

Your spotter reports during winter weather events this year have proven to be invaluable. These reports have helped us to determine weather a warning or an advisory was warranted in the forecast. They have helped in the verification process. And they have helped the NWS get information out to our customers like the media, emergency officials and the general public. The NWS would like to sincerely thank you for your dedication that you show by providing spotter reports during all types of hazardous weather.

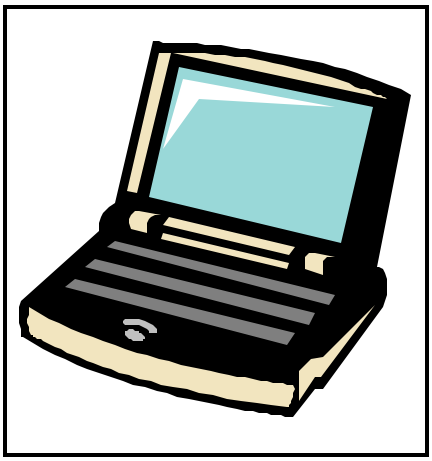
The need for winter weather spotter reports will probably not end with the first sign of the approaching spring season. There have been numerous March winter storms through the history of this region, including last year's March 26th snow storm that affect the Smoky mountains northward through Morristown and to the Cumberland Gap. Use the following guidelines when reporting.

SNOW	1 INCH OR MORE PER 12 HOURS
SLEET OR FREEZING RAIN	WHEN TRAVEL BECOMES HAZARDOUS, REPORT ICE ACCUMU-
NON-CONVECTIVE HIGH WINDS	MEASURED OR ESTIMATED WINDS OVER 50 MPH, ANY
RAIN	1 INCH OF RAIN DURING AN EVENT
FLOODING	WHEN FLOODING THREATENS ROADS OR PROPERTY

Spotter Training 2000

Rich Pollman

During this spring, the NWS Morristown will be conducting the usual spotter training session across east Tennessee, southwest Virginia, and extreme southwest North Carolina. Most spotter training session that will be conducted will be the Basic/ Intermediate presentation. This class will last just under 2 hours, plus a question and answer period. There will also be a few Advanced spotter classes throughout the Morristown CWA, including one in Knox county on March 25th and one in southwest Virginia on April 8th. Contact the Weather Office for directions and seating as Space is limited.



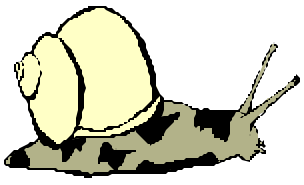
NWS Morristown will have a new multi-media spotter presentation

The Morristown web page will list as many skywarn spotter classes as possible, including the Advanced classes. If you would like to attend any of the classes listed on the web page, please contact the proper representative to reserve your place for the training session. The listing of all current spotter training sessions can be found at: **www.srh.noaa.gov/mrx/classes.htm**

There will be a few changes to the program this year. A few of you have already seen some of the changes during last year's presentations. The NWS Morristown's spotter presentation is all computerized. The multi-media presentation will allow us to continue to make the training session specific for the southern Appalachian region. In addition, a demonstration video was developed for this year's spotter presentation. This video is designed to show how future spotter videos will be developed using updated software.

"The multi-media presentation will allow us to continue to make the training session specific for the southern Appalachian region"

This year when you sign in for the class, we would also like to get your e-mail address. This information is strictly voluntary. There are two reasons for the e-mail address. First, it will give the NWS Morristown another avenue to ask about severe weather from you. Secondly, it will allow us to get this newsletter to you quicker, electronically versus "snail" mail. We hope to see all of you out at a training session this spring.



Meet CRS

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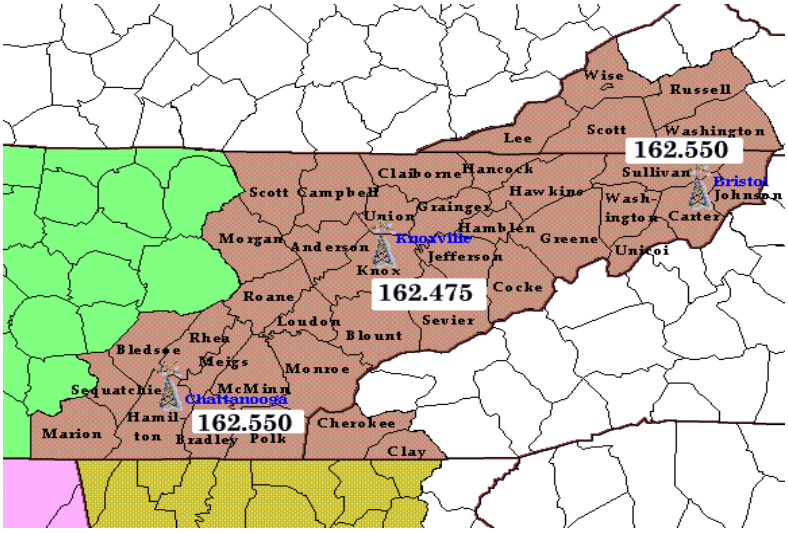
of being typed up by the National Weather Service, messages are converted to speech, and transmitted over the airwaves. In the past it might take a few minutes to encode all the SAME codes, record the message and get it playing over the air.

Speaking of SAME codes, I hope everyone is aware of SAME or Specific Area Message Encoding. Same allows us to send specific information about warning location, type and expiration time across the radio. This allows the newer receivers to automatically alert the listener about warnings. If you do not have one of the new SAME receivers, we encourage you to think about getting one.

I'll relate a personal story, I had a NWR receiver for years, but did not have the alert feature turned on because I didn't want to be awakened from a sound sleep for a warning 50 miles away. With the new SAME radio, I keep the radio on alert mode, programmed for the local area, and in the bedroom right next to the bed. I have been awakened a couple of times, but I know it is for weather that directly affects me and my family.



The National Weather Service has introduced a number of new technologies into the new modernized weather service offices over the past 5 years. Doppler Radar was the first big advance, AWIPS or Advanced Weather Interactive Processing System was next, now CRS is being fully implemented. There are plans in the budget within the next few years to upgrade from the pure computer voice to a human voice speaking the words and the computer joining the words for the message.

NOAA Weather Radio and the "SAME" technology...They can help you save your life!
SAME codes available at www.nws.noaa.gov/nwr
Or your National Weather Service Office

With these 3 systems working together, the weather forecaster warning for a storm can make the decision to warn, generate the warning, and have the warning playing on the air in a minute, possibly less. In past years it might take up to 5 minutes or more to accomplish this same task. This time savings can easily translate into lives saved. The 4 minutes this storm is traveling across an area clearly can be time spent taking cover and protecting yourself from the storms wrath. We understand that the voice is a change, but we think a change for the protection of life.

Severe Weather Reporting

Winds (Convective Winds from Thunderstorms)

-Report when they are 50 mph or greater

-Severe winds are 58 mph or greater

-Use the Beaufort scale to estimate wind speed

Hail

-Report when hail is 1/2 inch in diameter or greater

-Severe hail is 3/4 inch in diameter or greater

Rainfall

-Rainfall rate of 1 inch per hour

-When ever flooding threatens lives or property

Tornadoes

-Tornadoes, Funnel Clouds, Wall Clouds

-Report how long the Wall Cloud has been there, if there is rotation, strong surface inflow, or rapid vertical motion

How to Report

-Through you county's organized severe reporting network

-Directly to NWS Morristown through the toll-free number

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Morristown TN

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Severe Weather Awareness Week

Howard Waldron, Warning Coordination Meteorologist

This year, Severe Weather Awareness Week was February 20-26 in Tennessee and North Carolina. The Tornado Drill was on Wednesday February 23rd. Last year was a very quiet year from a severe weather standpoint, but we always need to be prepared for severe weather.

On Saturday of Severe Weather Awareness Week, we highlighted the role of spotters in the warning decision process. Highly trained spotters are indispensable when making decisions whether to warn on a storm. The Doppler Radar and our new Advanced Weather Interactive Processing System (AWIPS) are tremendous tools. Both have led to great advances in improved warnings over the past 6 years, but as good as these tools are, they do not replace the eyes and ears on the ground.

During Severe Weather Awareness Week, the NWS highlighted the role of spotters

When looking at verification statistics from the National Weather Service, the office here at Morristown was tops in the Southern Region. I want to thank everyone for their continued support of the warning program here in the Southern Appalachians, helping to make our job of protecting life and property possible.

Again, we hope for another quiet severe weather season, but we all need to be prepared for some of the worst nature can throw our way. If you have an opportunity to get to a spotter training session, I heartily encourage you to make the effort. It is so easy to forget from one year to the next, "now which way did that wall cloud point?", or " how much rain did they want us to report?"